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Is It Worth It? Deciding If Technology is Worth the Time, Effort, and Money

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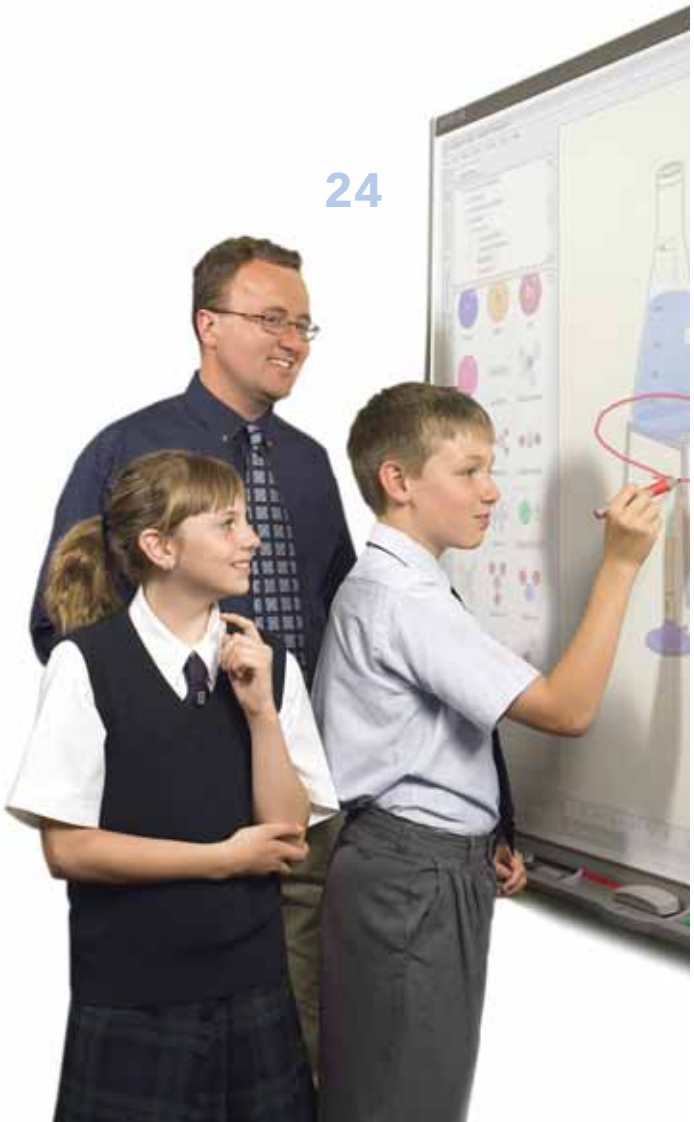

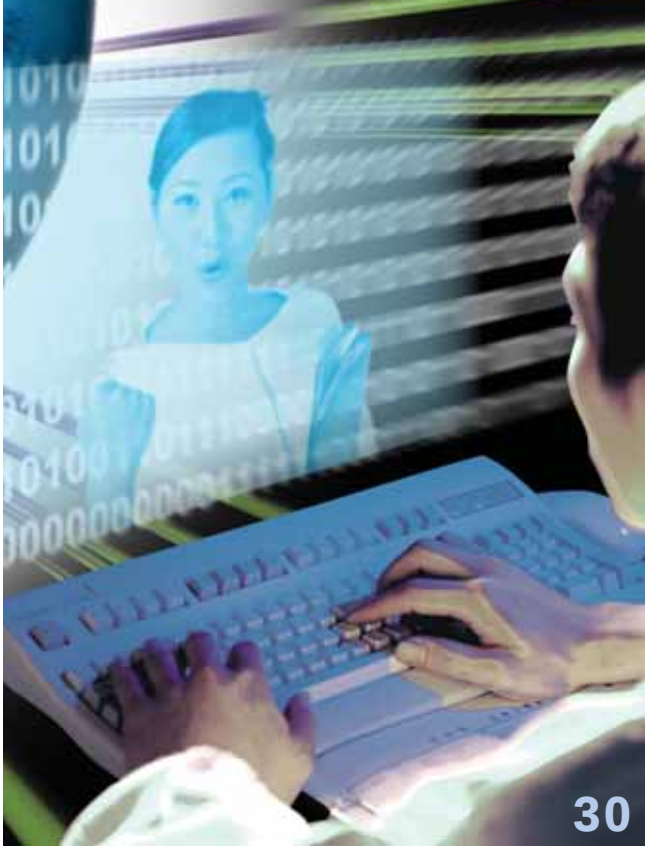

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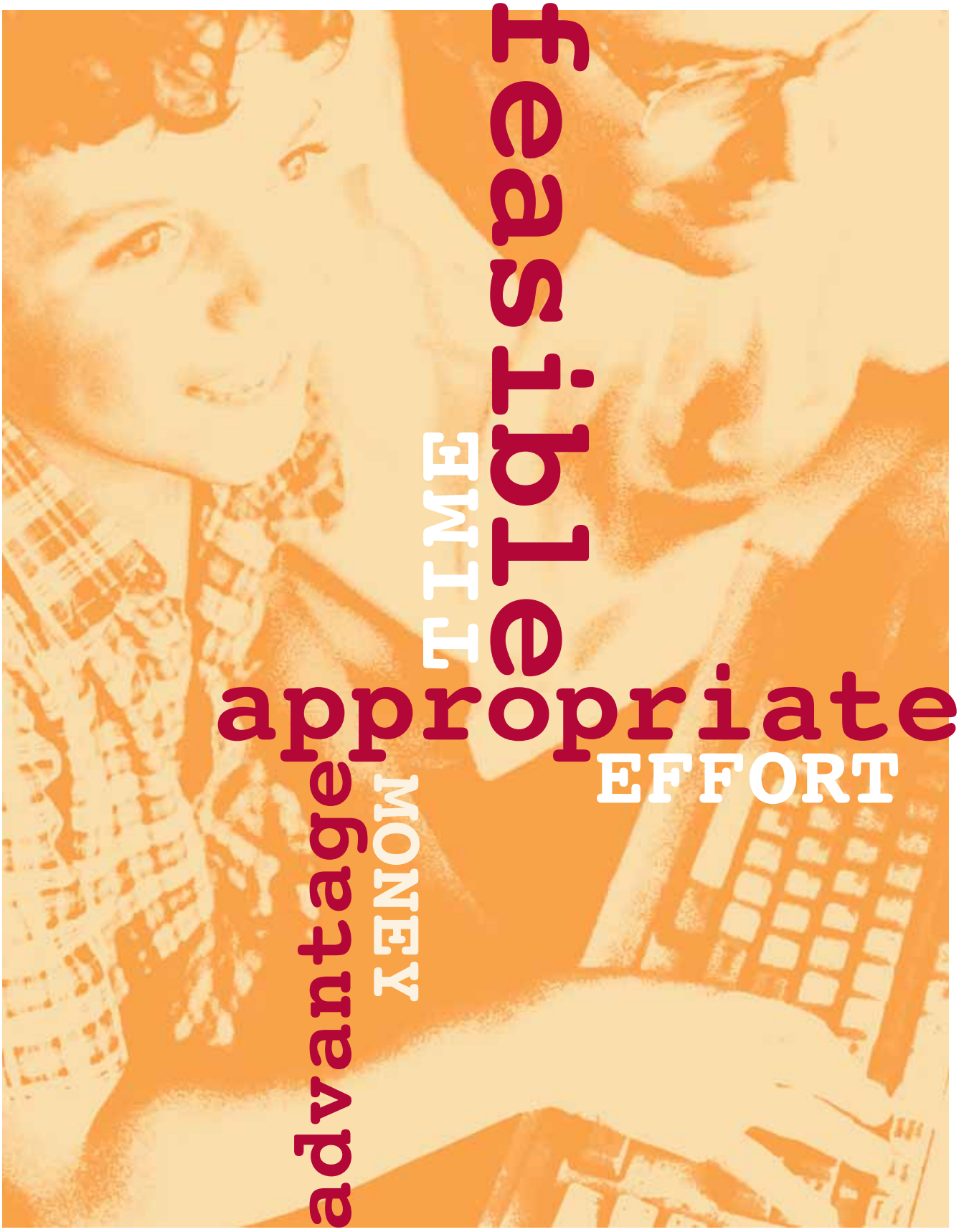
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TIME
MONEY
EFFORT

by Judi Harris

Is it worth it?

Deciding if technology is worth the time, effort and money

I begin this article with a warning of sorts. I warn you that I plan to tell it like it is with reference to regular, classroom-based use of digital education technologies. Specifically, I offer advice to help you decide which curriculum-based instructional activities to attempt to integrate into classrooms, with which students and when to do so. In making these practical suggestions, I am referring more to what is than what could be.

Deciding which uses of education technologies are most worth the additional time, effort and expense doesn't have to be guesswork. By weighing the learning outcome probabilities of new technology-based strategies against the success of existing pedagogical techniques we can decide, on a case-by-case basis, whether each new learning activity possibility is worth it.

Who decides?

i.e.'s pages are filled with promising ideas about implementations of education technologies. Yet no matter what the imagined potential is for any new implementation or idea, whether or not it truly gets used as a normal part of classroom activity is largely a result of teachers' professional decisions. Curriculum mandates, personnel evaluation procedures, standardized testing schedules, peer influence and community pressure can appear to force educators into implementing change before they are willing to choose it themselves. But frankly, we all know that once supervisors and concerned community members are at least temporarily appeased, teachers are still left with a good measure of academic freedom, even if they feel they have to exercise it covertly at times. Once teachers close the doors to their classrooms, what happens (and doesn't happen) inside is still largely the result of their individual pedagogical decisions.

New tools will become everyday implements in learning and teaching only as a result of teachers' conscious choices to make this happen and only to the extent that they deem the tools suitable for students and themselves. Key to deciding whether to implement a new learning activity is deciding whether it is worthwhile. In other words, is a particular digital tool or resource for a specific group of students and teachers worth the time, effort and expense required to use it? Will teaching with these tools help increase the quality, amount and depth of their learning? If teachers believe it will, they will try to use the tool or technique at least once. If not, use of the innovation will be resisted.

It's important to note that these decisions are not about all uses of all digital tools and resources for all time. Rather, these questions arise each time the use of an unfamiliar technology or technique is considered. Answers to the question, "Is it worth it?" will change as people and resources change. Access to digital tools and resources in schools and classrooms will continue to change. What is possible, available and expected will continue to change. Teachers, students and education leaders will also change as they learn more about new education technologies and what they can do.

How to decide

How can educators best make decisions about whether to use particular technology tools and resources for specific educational uses, keeping in mind the standards-based knowledge and skills that students need to learn? I suggest they apply a three-part instructional activity assessment comprised of three self-administered tests, each in the form of an activity assessment question.

The purpose of these tests is to provide a structured and

reliable way to decide whether an activity, project or unit is worth the time, energy and resources necessary to implement it successfully in specific scenarios given the contextual facilitators and inhibitors of successful implementation. The three parts of this assessment, each in the form of a question for teachers to consider, are the

- Feasibility test: Will this learning activity, project or unit idea work given the technological, interpersonal, logistical and contextual factors currently operating in your particular learning environment?
- Appropriateness test: Is this learning activity appropriate for your students given what you know about their learning needs and preferences? Is it appropriate for you as a teacher targeting specific curriculum knowledge and skills?
- Relative advantage test: Can the same learning outcomes be accomplished as well or better using more readily available and easy-to-use tools and resources?

advantage – that is, if answers to the first two questions are yes and the third is no – should the activity be attempted.

Sample decisions

It may seem obvious to suggest that teachers and students use new tools and approaches only if the technologies and accompanying techniques can be applied in innovative ways to help new and worthwhile things happen in classrooms. Yet, whenever educators are offered unfamiliar tools, something interesting happens. Most of what we do at first with the new tools looks very similar to what we did with older tools that seem functionally similar to the innovations.

For example, when teachers first began to use electronic mail and electronic bulletin boards in the early 1980s, what kinds of projects were most prevalent? Keypal (online penpal) projects. This makes sense if we consider that e-mail was first seen as a very close relative of surface mail. Penpal projects, in which students used paper, envelopes and stamps were successful educational activities in classrooms long before computers appeared in schools.

> "Only if teachers deem a learning activity under consideration to be feasible, appropriate and to have relative advantage – should the activity be attempted."

Though there are six possible response combinations to these questions, only one combination serves as a pass for the learning activity being assessed. If the response to the feasibility test question is no, even if responses to the other two questions are yes, then the activity should not be attempted because it would probably be unsuccessful given the current contextual conditions. Similarly, if the response to the appropriateness test question is no, then there is no reason for this particular learning activity to be attempted. If the answers to all three questions are yes, there is probably no good reason to use the particular education technologies in the way being considered. If students can learn just as well or better with tools and approaches they've already mastered, it doesn't make sense to invest in new tools.

Only if teachers deem a learning activity under consideration to be feasible, appropriate and to have relative

At first, electronic mail was seen as faster surface mail. Later, as users learned more about how to exploit this global communications tool, educators' visions of how e-mail could be used for education purposes expanded. Now there are at least 10 different types of learning activities involving e-mail (of which keypals is just one) that can assist students' curriculum-based learning. Information about other examples of curriculum-based learning activities that would surely pass the three-part self-assessment is available through a variety of websites. (See Resources box on next page for a sample).

Influencing decisions

But what if teachers decide that a particular digitally enhanced learning activity is not worthwhile, and that

decision is based upon a lack of knowledge or understanding of the true instructional potential of the activity? The hard truth is that a teacher's perception of whether a new teaching tool or technique is worthwhile is what determines if, when, how well and for how long it will be implemented regardless of whether or not other teachers or teacher educators would agree.

So if teachers are the ultimate arbiters of instructional decision-making with regard to which tools and techniques are to be used by students for curriculum-based learning in classrooms, it is critically important to help teachers and administrators stay abreast of emerging technology integration models, examples and techniques that are relevant to their current instructional assignments and their imminent instructional decision-making. This type of professional development requires sharing specific and practical instructional tools and techniques, done with and by professionals, intended to persuade decision making with classroom-based evidence and relevant, practical instructional examples.

Unfortunately, many district- and university-based professional development personnel assume that teachers will choose not to change their practice unless forced to do so by their supervisors. Yet more than two decades of education technology implementation experience in schools has taught us that although top-down mandates can be fulfilled superficially, lasting pedagogical change associated with technology integration happens only when teachers are successfully persuaded by direct or vicarious experience that a new technique is more worthwhile. The new way must be adequately feasible, specifically appropriate and more beneficial to students' learning than the old way.

This process of professional persuasion, best done teacher-to-teacher, is not a simple task. Yet, like the process of integrating education technologies into curriculum-based learning and teaching, the process of influencing teachers' pedagogical decision-making about new tools and techniques is challenging, worthwhile and ultimately achievable.

Reprinted with permission of ISTE®. Portions of the information contained in this article will be published in the second edition of Judi's book, Virtual Architecture: Designing and Directing Curriculum-Based Telecomputing, *to be published by the International Society for Technology in Education in 2006.*

RESOURCES

Recommended resources for curriculum-based learning activities

- *Edutopia*
  http://www.edutopia.org/index.php
  published by The George Lucas Educational Foundation
- *Learning and Leading with Technology*
  http://www.iste.org/
  "Publications," published by the International Society for Technology in Education
- The Global Schoolhouse
  http://www.globalschoolnet.org/GSH/index.html
  provided by the Global Schoolnet Foundation
- CIESE's K–12 Education Projects
  http://njnie.dl.stevens-tech.edu/currichome.html
  supported by the Center for Innovation and Engineering in Science Education at the Stevens Institute of Technology
- WebQuest Portal
  http://www.webquest.org
  "Find WebQuests," maintained by Dr. Bernie Dodge at San Diego State University
- Virtual Architecture's Web Home
  http://virtual-architecture.wm.edu
  maintained by Judi Harris